The Impacts of Off-Balance Sheet Types and Investment Positions on Investors’ Ability in Detecting Balance Sheet Management

Huda Wongyim¹, Sompong Pornupatham²

Abstract

This study investigated the impact of off-balance sheet (OBS) types and investment positions on investors’ ability to detect the OBS financing arrangements. Through an experimental approach, given the investors’ knowledge of creative accounting, the research provides evidence that the directional preferences influence the investors’ detection ability of off-balance sheet financing. Specifically, long investors were biased from their directional goal for the firm’s positive performance as compared to neutral investor i.e. prospective investor.

However, no significant difference was found between the short and long investors’ judgements. Further, it was found that off-balance sheet types significantly influenced the investors’ ability to detect the off-balance sheet financing transactions. Given their knowledge of creative accounting, the investors facing with equity method were less likely to detect OBS than those facing with operating lease.

The implication of the findings is for the relevant regulatory bodies to revisit the disclosure format related to complex OBS so as to reduce the complexity burden borne by the investors. Moreover, this research is expected to raise investors’ awareness on the usefulness of disclosure information in the footnote section. Besides, this finding could serve as a caution for financial investors that investment preference could undermine their rationale and impair their ability to detect creative accounting in the financial statements.

Keywords: Off-balance sheet financing, Directional preference, Investors’ judgements, Investment position, Detection ability

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INTRODUCTION

Off-balance sheet financing (OBS) arrangements have long been tools employed by management to conceal financial risks. The unscrupulous behavior is detrimental to the investment community at large as investors have been misled by the manipulated financial reports that were supposedly in full compliance with GAAP (Ball, 2009).

Enron, which was found to create over 3,000 off-balance sheet special-purpose entities (SPEs), was one of the most notorious examples involved in such a dishonest practice (Klee & Butler, 2002). The biggest problem with off-balance sheet finance is its lack of visibility. Although firms are required by regulations to disclose information about their activities on leasing or related parties in the footnote, investors oftentimes find it difficult to make proper judgment of a company’s underlying economic circumstances because firms often provide obscure and limited disclosure. The inability to detect hidden financial risk could misdirect investment and thus incur great costs on investors.

In response to this problem, this study is concerned with the ability of non-professional investors to detect off-balance sheet accounting in both less complex structure and more complex structure cases. In addition, this research aims to explore how directional preference bias affects investors’ ability to detect the accounting information when dealing with off-balance sheet accounting.

BACKGROUND AND HYPOTHESES

Off-balance sheet financing

Firms are motivated from various economic reasons to engage in off-balance sheet financing as these tools provide them with lower cost of financing, high debt rating, tax shelter, and impressive financial performance. Besides, off-balance sheet financing sometimes even resolves underinvestment problems arising from agency cost of debt.1

Corporate managers have a variety of tools and techniques by which they can use to conceal debts. Griffith (1996) suggested in his book that off-balance sheet financing has grown rapidly over the last decade not just in size but also in sophistication. This research focuses on two types of off-balance sheet financing belonging to the first group (i.e. operating lease and equity method) since the disclosures pertinent to both OBS types are

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available for users of financial statements to make analytical adjustment but vary in the complexity of the disclosure content.

The effect of knowledge on investors’ judgement

Research studies on investors’ judgement suggested that specific knowledge of individual affects their judgement and decision making. Krische, Sanders, and Smith (2013) found that in a lease obligation setting, users’ understanding of the implication of accounting choice (e.g. structuring transaction to meet condition of recording lease as operating lease or financial lease) and the manager’s incentive about the choice influenced the perceived credibility of management and investment risk judgments. This is consistent with Nelson and Tayler (2007), who provided evidence that only relatively more knowledgeable user likely attempt the reconciliation and adjust lease obligation amounts in the footnote. Thus, these suggest that different levels of knowledge contribute to differences in the investors’ judgment. Therefore, this research speculated that the effect of independent variable would conditional upon their knowledge of creative accounting.

Relation of OBS types to the predicted detection ability

The following hypotheses relate to the differences in detection rates for differing types of OBS. Craig and Walsh (1989) suggested that different window-dressing schemes were different in their visibility. Breton and Taffler (1995) supported this idea and reported that analysts facing the practice of hiding debt with non-consolidated subsidiary, a form of off-balance sheet technique, had a lower correction rate than creating profit via asset disposal. Based on the aforesaid, it should be easier for investors to detect a less complex off-balance sheet practice than a more complex one. In addition, disclosure levels of different kinds of off-balance sheet accounts are diverse. Operating lease is required by law to provide greater details of its transaction and provide information that easier to understand than is the equity method. I thus posit the following hypothesis:

H1: Conditional upon their knowledge of creative accounting, investors faced with operating lease have greater propensity to detect off-balance sheet financing than those faced with equity method.

Relation of investment position to the predicted detection ability

Research studies on psychology conclude that decision makers’ preference or directional incentives influence the manner in which they process information (Kunda, 1990). Investors are motivated to hold directional
preference according to their investment positions (Hales, 2007; Han & Tan, 2010; Thayer, 2011) and directional preference could either reduce or induce situational skepticism in their decision making process (Ditto & Lopez, 1992; Ditto et al., 2003; Ditto et al., 1998). In this study, I explore how this mechanism affects investors’ ability to detect the manipulated financial statements.

Several studies indicate that skepticism or suspicion affects auditors’ ability to detect fraud and creative accounting (Fathil and Schmidtke, 2010; Popova, 2013; Rose, 2007). Besides, Demerens, Paré, and Redis (2013) concluded that standards and rules alone were insufficient to stop creative accounting and thus ex-ante detection and skepticism could help investors detect and correct these accounting manipulations.

Thus, I expect that participants holding different investment position (short, long and neutral) will have different in their abilities to detect off-balance sheet. I posit the following hypothesis:

H2: Conditional upon their knowledge of creative accounting, Investment positions affect investors’ ability to detect off-balance sheet financing.

Interaction between off-balance sheet financing types and investment positions

According to existing literature, directional preferences could induce skepticism and scrutiny to the information processing of decision makers when faced with preference-inconsistent situations but would reduce skepticism under preference-consistent situations (Ditto & Lopez, 1992; Ditto et al., 2003; Ditto et al., 1998).

The ability to scrutinize information, when individuals are faced with preference consistence or inconsistence, is subject to the characteristics of available information. Dissimilarity of the disclosures pertinent to operating lease and equity method could differently influence the investors’ ability to scrutinize information. Thus, it is expected that the effects of investment positions on investors’ detection ability are dependent upon off-balance sheet types. Hence, I posit the following hypotheses:

H3: Conditional upon their knowledge of creative accounting, the effect of investment position on investors’ detection ability is conditional upon off-balance-sheet types.
RESEARCH DESIGN

The study samples were 186 MBA students who served as proxy for non-professional investors (Elliott et al, 2007). The research work was of 2 x 3 between-subject design that manipulates the types of off-balance sheet financing (operating lease vs. equity method) and the participants’ investment positions (short, long and neutral). In total, 199 participants completed the experiments, but 13 were removed from the analysis because they provided incorrect response to manipulation check question\(^2\). Thus, final sample is equal to 186 participants. See table 1 for a reconciliation.

**Table 1 Reconciliation of the Total Sample to the Sample Used for Analysis**

<table>
<thead>
<tr>
<th>Condition</th>
<th>SE</th>
<th>LE</th>
<th>SO</th>
<th>LO</th>
<th>NEQ</th>
<th>NO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total submission</td>
<td>41</td>
<td>40</td>
<td>42</td>
<td>42</td>
<td>17</td>
<td>17</td>
<td>199</td>
</tr>
<tr>
<td>Less: Failed</td>
<td>(1)</td>
<td>(9)</td>
<td>(1)</td>
<td>(2)</td>
<td>-</td>
<td>-</td>
<td>(13)</td>
</tr>
<tr>
<td>Final sample</td>
<td>40</td>
<td>31</td>
<td>41</td>
<td>40</td>
<td>17</td>
<td>17</td>
<td>186</td>
</tr>
</tbody>
</table>

*Definition of abbreviations in table is as follows:*

\(SEQ = \text{Short position and Equity method} \quad LEQ = \text{Long position and Equity method}\)

The manipulation of investment position is intended to determine whether the information provided about the company’s predicted future performance were viewed as preference-consistent or preference-inconsistent.

The manipulation approach of short and long position is based on previous studies on the investment positions (Hales, 2007; Han & Tan, 2010; Thayer, 2011). The participants assigned with short position (i.e., groups 1 and 3) were informed that lower earnings would leave them with more points and compensation, so the lower the firm’s performance, the better off they are. While the participants with long position (i.e., groups 2 and 4) were supplied with the information that higher earnings would leave them with higher performance.

\(^2\) All results do not change when responses from those who failed the manipulation check are included.

\(^3\) Priori sample size determination were calculated by statistical computer program, G*Power3 (Faul, Erdfelder, Lang, & Buchner, 2007). Based on result from pilot study, researcher set effect size equal to 0.30, power of the experiment equal to 0.90, and significance level equal to 0.05. Results showed that total sample size needed for the main analysis of this study equal to 119 samples, as a result, this study required 30 samples per cell approximately.
more points and compensation, so the higher the firm’s performance, the better off they are.

In this research study, all participants were presented with a good sign of firm’s performance in the upcoming year so that long investors were induced to have preference-consistent with the information while short investor have preference-inconsistent. For participants in neutral condition (i.e., groups 5 and 6), their compensation did not ties to firm’s performance because they did not invest in the company, thus, received only a flat payment for participation.

The second manipulation is the types of off-balance sheet financing. The participants faced two kinds of off-balance sheet techniques: equity method and operating lease. The accounting policy as well as footnote disclosure related to each off-balance sheet transaction were presented following the company overview and analyst forecast. Nevertheless, this research study does not label this information as company’ footnote but rather ties it to the company overview. This is to examine the usefulness of content in the footnote section; in other words, whether the footnote is adequate to help investors detect off-balance sheet debts and assets. With this approach, investigation of the information content of footnote on off-balance sheet financing is possible.

Participants’ ability to detect off-balance sheet financing is examined whereby the participants were presented with various creative accounting techniques (e.g., income smoothing, take a big bath), including off-balance sheet financing, and were asked to estimate probability that the company is using one of the accounting scheme.

**RESULTS**

The testing of hypotheses was carried out using analysis of variance (ANOVA) and planned contrast comparisons. H1 posits that the investors under the operating lease condition are better able to detect off-balance sheet financing than are those under the equity method condition. As shown in Panel B of Table 2, the off-balance sheet types are significant for the high knowledge group ($p = 0.02$). Independent sample t-test shows that the investors under the operating lease condition (mean = 5.91) were better able to detect off-balance sheet financing than those under the equity method condition (mean = 5.36; one–tailed $p = 0.02$). However, the result does not
hold true for the low knowledge group \((p = 0.96)\), as shown in Panel C of Table 2.

According to Cornaggia, Franzen, and Simin (2012) and Bauman (2003), equity method is more difficult for investors to discern the true nature of transaction than operating lease, resulting in investors facing operating lease were better able to detect OBS than those facing equity method. Thus, H1 is supported.

Table 2  ANOVA results for detection ability

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>5902.74</td>
<td>6</td>
<td>983.79</td>
<td>563.49</td>
<td>0.00</td>
</tr>
<tr>
<td>OBS</td>
<td>3.73</td>
<td>1</td>
<td>3.73</td>
<td>2.14</td>
<td>0.14</td>
</tr>
<tr>
<td>Position</td>
<td>3.40</td>
<td>2</td>
<td>1.70</td>
<td>0.97</td>
<td>0.37</td>
</tr>
<tr>
<td>OBS * Position</td>
<td>1.27</td>
<td>2</td>
<td>1.27</td>
<td>0.36</td>
<td>0.69</td>
</tr>
<tr>
<td>Error</td>
<td>314.25</td>
<td>180</td>
<td>1.74</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6217.00</td>
<td>186</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B: ANOVA Results for High knowledge group

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>3419.51</td>
<td>6</td>
<td>569.92</td>
<td>342.33</td>
<td>0.00</td>
</tr>
<tr>
<td>OBS</td>
<td>8.77</td>
<td>1</td>
<td>8.77</td>
<td>5.26</td>
<td>0.02</td>
</tr>
<tr>
<td>Position</td>
<td>7.54</td>
<td>2</td>
<td>3.77</td>
<td>2.26</td>
<td>0.10</td>
</tr>
<tr>
<td>OBS * Position</td>
<td>7.05</td>
<td>2</td>
<td>3.52</td>
<td>2.11</td>
<td>0.12</td>
</tr>
<tr>
<td>Error</td>
<td>166.48</td>
<td>100</td>
<td>1.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3586.00</td>
<td>106</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel C: ANOVA results for low knowledge group

<table>
<thead>
<tr>
<th>Source of variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>2076.27</td>
<td>4</td>
<td>519.06</td>
<td>255.94</td>
<td>0.00</td>
</tr>
<tr>
<td>OBS</td>
<td>0.01</td>
<td>1</td>
<td>0.01</td>
<td>0.00</td>
<td>0.96</td>
</tr>
<tr>
<td>Position</td>
<td>0.03</td>
<td>1</td>
<td>0.03</td>
<td>0.01</td>
<td>0.91</td>
</tr>
<tr>
<td>OBS * Position</td>
<td>2.00</td>
<td>1</td>
<td>2.00</td>
<td>0.98</td>
<td>0.33</td>
</tr>
<tr>
<td>Error</td>
<td>125.74</td>
<td>62</td>
<td>2.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2202.00</td>
<td>66</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The ANOVA results in this table exclude the two conditions with neutral investment position.

In the post-experimental session, the participants rated their knowledge of creative accounting on a scale of 1 (not know at all) to 7 (know well). The samples were divided by the mean knowledge level in creative accounting (4.61).
H2 expects that the short investors have a greater propensity to detect off-balance sheet financing than do the long investors. Table 4 however indicate that investment positions are of insignificance in all sample (p = 0.37), the high (p = 0.10) and low knowledge groups (p = 0.91). The findings revealed that investor with each position do not performed differently on the detection task. Thus, H2 is not supported.

H3 predicts that the effect of investment preference on detection ability is conditional upon off-balance sheet types. Panel B of Table 4 however indicate that two-way interaction effect of off-balance sheet types and investment positions are of insignificance in all sample (p = 0.69), the high (p = 0.12) and low knowledge groups (p = 0.33). Thus, H3 is not supported.

Further, the impact of investment positions (short and long) on the detection ability against the control group (neutral) was determined using contrast analysis, see Table 3.

Table 3  Planned contrast of detection ability

<table>
<thead>
<tr>
<th>Panel A: For all conditions (N=186)</th>
<th>Contrast a</th>
<th>Value of contrast</th>
<th>Std. error</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Position – No position</td>
<td>-1.28</td>
<td>0.85</td>
<td>-1.51</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td>2. Short – Neutral</td>
<td>-0.75</td>
<td>0.46</td>
<td>-1.62</td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>3. Long – Neutral</td>
<td>-0.53</td>
<td>0.50</td>
<td>-1.06</td>
<td>0.29</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel B: For High knowledge group (N=106)b</th>
<th>Contrast a</th>
<th>Value of contrast</th>
<th>Std. error</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Position – No position</td>
<td>-2.59</td>
<td>1.16</td>
<td>-2.23</td>
<td>0.03</td>
<td></td>
</tr>
<tr>
<td>2. Short – Neutral</td>
<td>-1.47</td>
<td>0.64</td>
<td>-2.29</td>
<td>0.02</td>
<td></td>
</tr>
<tr>
<td>3. Long – Neutral</td>
<td>-1.12</td>
<td>0.65</td>
<td>-1.70</td>
<td>0.09</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Panel C: For Low knowledge group (N = 80)b</th>
<th>Contrast a</th>
<th>Value of contrast</th>
<th>Std.error</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Position – No position</td>
<td>0.55</td>
<td>1.58</td>
<td>0.35</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td>2. Short – Neutral</td>
<td>0.23</td>
<td>0.85</td>
<td>0.27</td>
<td>0.78</td>
<td></td>
</tr>
<tr>
<td>3. Long – Neutral</td>
<td>0.31</td>
<td>0.86</td>
<td>0.37</td>
<td>0.71</td>
<td></td>
</tr>
</tbody>
</table>

a The contrast codes above are as follows:

Contrast 1 is: SEQ[1], LEQ[1], SOL[1], LOL[1], NEQ[-2], NOL[-2]
Contrast 2 is: SEQ[1], LEQ[0], SOL[1], LOL[0], NEQ[-1], NOL[-1]
Contrast 3 is: SEQ[0], LEQ[1], SOL[0], LOL[1], NEQ[-1], NOL[-1]

b Participating subjects were divided into the highly knowledgeable and low knowledgeable groups using the mean knowledge level as the cut-off point (mean = 4.67)
To summarize, given high knowledge investors, the contrast analysis has revealed that the presence of investment preference could contribute to a decrease in an investor’s detection ability of accounting manipulations vis-à-vis a condition where the investment preference is absent (i.e. neutral position). According to Harris, Hobson, and Jackson (2015), they found that the prospective investors would incorporate all information in their assessment of the firm’s investment opportunity while the long investors would focus exclusively on the firm’s earnings due to their fear of loss. Taken together, this could be the reason why the neutral investors are better able to detect irregularities in the financial statement than are the long investors.

CONCLUSION

This research has investigated the impact of off-balance sheet (OBS) types and investment positions on investors’ ability to detect the OBS financing arrangements. Through an experimental approach, the research findings evidently showed that the directional preferences influence the investors’ detection ability of off-balance sheet financing. It was found that off-balance sheet types significantly influenced the investors’ ability to detect the off-balance sheet financing transactions, consistent with the researcher’s prediction.

This research is expected to offer useful insights to accounting researchers, investors and regulators. First, the finding that the investors’ detection ability of the off-balance sheet financing arrangements is influenced by their investment positions contributes the existing body of research on directional preference (Elliott et al., 2015; Hales, 2007; Han & Tan, 2010; Harris et al., 2015; Thayer, 2011). This finding could serve as a caution for financial investors that investment preference could undermine their rationale.

Second, this research also offers new evidence with regard to the effect of the placement (i.e. position) of disclosure information, i.e. in the footnote section or recognized in the financial statement. While previous research documented that footnote disclosure is insufficient and less useful than the recognized information (Bauman, 2003; Maines & McDaniel, 2000), this current research findings indicated that, given the investors’ knowledge of creative accounting, even the non-professional investors could avail themselves of disclosure information pertaining to the OBS transactions whereby the concealed debts are re-introduced into the balance sheet.
Furthermore, it was determined that the level of detection ability is subject to the complexity of OBS transactions (i.e. OBS types). The implication of the findings is for the relevant regulatory bodies to revisit the disclosure format related to complex OBS (i.e. equity method) so as to lessen the complexity burden borne by the investors. Moreover, this research is expected to raise investors’ awareness on the usefulness of disclosure information in the footnote section.

Third, to accounting researchers, the implication of the findings is that investors’ knowledge of creative accounting should be treated as a control variable in accounting research on investors’ detection ability of accounting manipulations.

This experimental research nonetheless contains certain limitations. First, no measurement of investors’ skepticism was taken following their being presented with favorable (unfavorable) financial information for the long (short) investors. Second, this research deliberately used a positive performance setting to manipulate the long investors facing favorable information and short investors facing unfavorable information. Third, in this current research, the participating MBA and Master of accounting students were proxies of non-professional investors, rendering the research findings less applicable to more experienced investors, e.g. investment analysts. Future research should attempt to identify mechanisms that could potentially lower the directional preference bias in the long and short investors. In addition, other than the operating lease and equity method, there exist several other contexts pertinent to the financial statements that could be the focus of future research, e.g. revenue recognition management and asset securitization.

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